

Lateral Sway Braces

Beware of UL Listing Limitations

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This article is intended to alert the contractor/engineer to variations among UL listings of lateral sway braces. Since listed applications vary among the manufacturers, we advise familiarity with the brand you use. Remember that a lateral sway brace assembly consists of three components:

- Sway Brace - UL listed to join fire sprinkler pipe to the brace pipe.
- Brace Pipe – sized per NFPA 13 usually 1" or 1 1/4" schedule 40.
- Attachment End – UL listed to join the brace pipe to the building structural element using a fastener per NFPA 13.

The lateral sway brace assembly is installed per NFPA 13, which defines minimum acceptable ability of structural elements and locations of attachment to them, methods of attachment, and spacing of sway braces on the fire sprinkler pipe.

Most manufacturers have two listed designs of lateral sway braces. The brace bodies are formed of rod or flat steel. The newest designs using formed flat steel (Figure 1) have higher load ratings and fewer restrictions on sprinkler pipe application. The older designs, therefore the most popular, use formed rod bodies. (see Figure 2) Formed rod designs have more listing application restrictions. So we are writing this article to highlight these limitations.

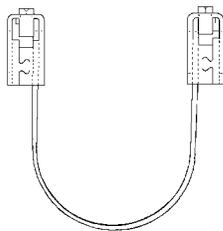


Figure 1

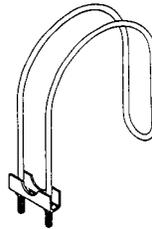


Figure 2

Rod body designs evidence some, none or all of the following UL listing limitations:

- Schedule 7 UL Listing limited by one or more of the following:
 - 1) Larger pipe sizes not listed.
 - 2) Lower horizontal load ratings which may vary among pipe sizes.
 - 3) Special torque requirements.
 - 4) No UL Listing for schedule 7 sprinkler pipe.
- Design and/or load rating may vary between 6" and 8" sprinkler pipe. This may present design limitations as 6" zone of influence, which includes line loads, may actually approach 8" load ratings of 2015#. Therefore 2015# rating on 6" is very beneficial.
- No UL listing for use on sprinkler pipe larger than 4" regardless of pipe type.
- Longitudinal ability = limited to none. (see article "Combination Lateral/Longitudinal Sway Braces").
- Poor documentation on engineering sheets: missing horizontal load ratings, missing drawings, and confusing statements regarding the above limitations.

This text should help define your engineering strategy for sway brace application on your fire sprinkler system designs. We recommend that all parts of a sway brace assembly be from the same manufacturer. Our UL listings exclude component brand variation in a sway brace assembly.

If you have questions talk to the manufacturer directly regarding their product and the details of its UL listing.